Japan's 2011 Earthquake and Tsunami: Economic Effects and Implications for the United States

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Overview

The March 11, 2011, earthquake and tsunami that occurred in Japan followed by a nuclear crisis and shortage of electricity is having a large negative economic impact on the country but a lesser effect on world markets. Japan has lost considerable physical and human capital. Physical damage has been estimated as ranging from $250 billion[1] to as much as $309 billion,[2] the latter figure being nearly four times as much as Hurricane Katrina ($81 billion) and roughly equivalent to the GDP of Greece and twice that of New Zealand. In excess of 27,000 persons in Japan are killed or missing, and more than 146,000 homes and other buildings have been totally or partially damaged.[3] Analysts expect that over the next quarter or so, Japan's economy will contract, but may expand because of rebuilding activity later in the year and into 2012. As the third-largest economy in the world, Japan's GDP at $5.5 trillion accounts for 8.7% of global GDP.

Congressional interest centers on humanitarian concerns, the impact on U.S. citizens and American companies in Japan, and the effects of the disaster on the exchange of both goods and services, and on Japanese and U.S. financial markets, interest rates, and the yen-dollar exchange rate.

The damage from the earthquake and tsunami is being compounded by the evacuations and uncertainty from the problems at the Fukushima nuclear reactors. Tokyo's power supply is experiencing a shortfall of as much as a third of peak capacity, and the electrical grid is experiencing a current shortage of as much as a quarter of capacity. The earthquake also damaged plants and equipment far from its epicenter. Port facilities, sensitive electronic equipment, 2,035 roads and 56 bridges also were harmed. These were located in a wide area of the country that even reached Tokyo's northern suburbs. The human toll also has been great with 10,102 persons killed, 17,053 missing, and another 2,777 injured (as of March 25, 2011). Higher radiation levels are being detected in Tokyo's water supply and in leafy vegetables and milk from around the area of the Fukushima Daiichi Nuclear Plant. Depending on how long the nation's electrical generating capacity is impaired, how long and how wide an area of evacuation because of radiation danger is continued, whether a widespread nuclear event occurs, and how quickly alternative sources can be found for critical electronic and automotive parts whose production has been curtailed, the negative economic effects could grow.

In recent decades, Japan's growth rate has lagged behind that of the world, so it has not been a major contributor to global economic growth. The net impact of the disaster on global GDP, therefore, is expected to be relatively small (about 0.5 percentage points) with about half of that effect confined to Japan itself.

As for U.S.-Japan economic relations, earthquake-related events in Japan are still unfolding; therefore, any economic impact assessments are at best preliminary. Nevertheless, it is likely that the impact of the earthquake and ensuing events on the bilateral economic relationship will be

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[1] IHS Global Insight, *Japan: Japan's Earthquake: A Macroeconomic Damage Assessment*, Country Intelligence - Analysis, March 24, 2011.

[2] Keiko Ujikane, "Japan Sees Quake Damage Bill of Up to $309 Billion, Almost Four Katrinas," *Bloomberg*, March 23, 2011.

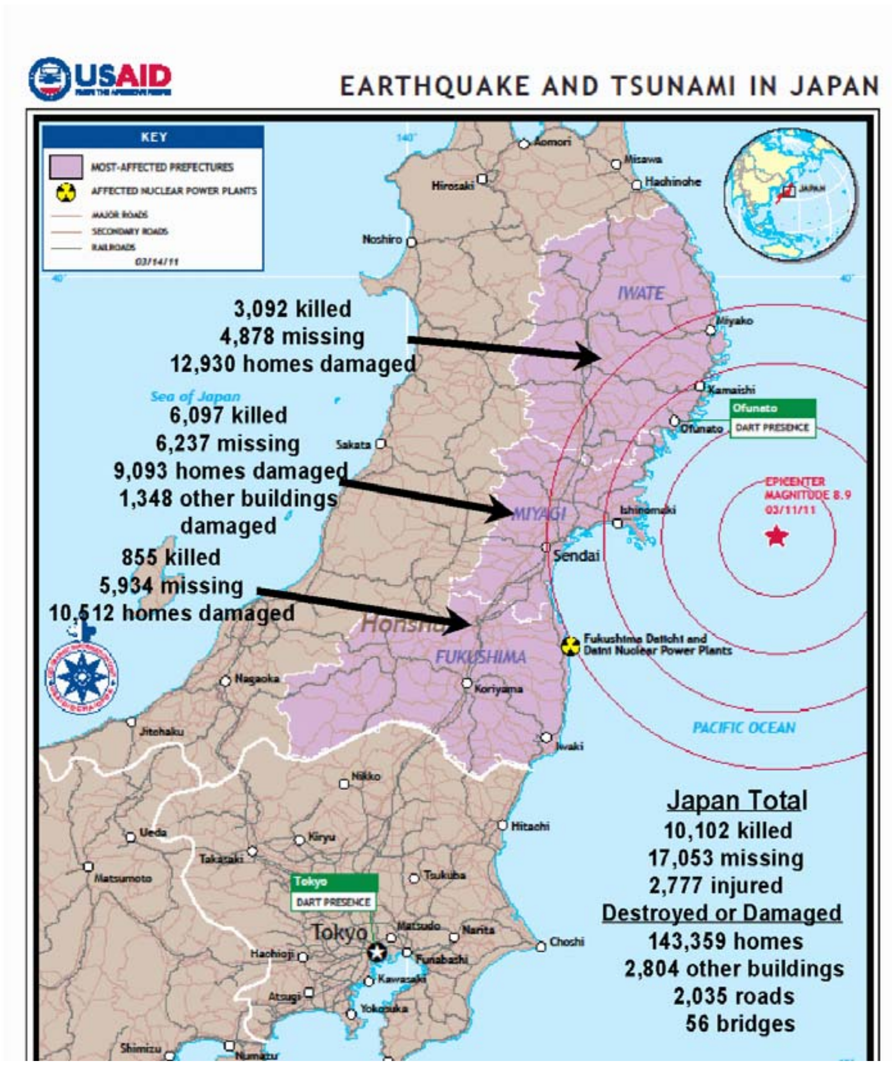
[3] Data are updated daily. See Japan National Police Agency, *Damage Situation and Police Countermeasures associated with 2011Tohoku district - off the Pacific Ocean Earthquake.* http://www.npa.go.jp/archive/keibi/biki/higaijokyo_e.pdf

modest overall; however, the effects could be more profound in the near term and on specific sectors and firms for which trade and investment with Japan is particularly important.

Japan plays a major role in global supply chains both as a supplier of parts and as a producer of final products. In this age of just-in-time production processes, even a small disruption in the provision of a single component can wreak havoc on an entire product line. Japan's production of automobiles, semiconductors, and electronics is likely to be affected the most, but companies in the United States that rely on Japan for critical components such as electronic parts and batteries or transmissions for electrical vehicles also will be affected. Tourist arrivals from Japan also are expected to fall.

Figure 1. Persons Killed, Missing, and Homes Totally or Partially Damaged

As of March 23, 2011



Source: Underlying map from U.S. AID. Casualty and damage data from Japan, National Police Agency.

U.S. imports from and exports to Japan are temporarily being hindered because of shipping bottlenecks and the nature of the disaster. In the medium term, a slowdown in growth in Japan is likely to reduce U.S. exports there, but eventually rebuilding will require large amounts of construction supplies. If imports of certain products from Japan become scarce, China, South Korea, or other nations may gain at Japan's expense. Trade data for Japan are presented in the Appendix to this report.

The U.S. Food and Drug Administration has banned imports of spinach and kakina from the four Japanese prefectures of Fukushima, Ibaraki, Tochigi, and Gunma and milk from Fukushima prefecture only. All milk and milk products and vegetables and fruits produced or manufactured from the four Japanese prefectures affected are to be detained upon entry into the United States and not allowed to enter the U.S. food supply unless shown to be free from radionuclide contamination.[4] The European Union, Australia, Hong Kong, Philippines, Singapore, India, and Canada have required increased surveillance of food products from Japan.

Figure 2. A Tug Boat among Debris in Ofunato, Japan

Source: U.S. Navy photo by Mass Communication Specialist 1st Class Matthew M. Bradley.

The value of the yen has been increasing, prompting coordinated intervention by the G-7 countries to halt excessive yen appreciation. A repatriation of assets back to Japan may put upward pressure both on the yen and on U.S. interest rates if Japanese investors sell U.S. Treasury and other securities.

The questions going forward include whether Japan's debt burden will leave it unable to secure the funds needed for rebuilding; whether the disaster has fundamentally altered the Japanese

[4] U.S. Food and Drug Administration, *What is FDA doing to ensure the safety of products imported from Japan?*, Radiation Safety/Questions about Food Safety, Washington, DC, updated March 23, 2011, http://www.fda.gov/NewsEvents/PublicHealthFocus/ucm247403.htm.

economy and the competitive position of its industries relative to those in China, South Korea, and other nations; what the impact will be on energy markets and the nuclear industry in Japan and the world; how Japan and other countries should cope with large inflows of "hot money" that can distort exchange rates; whether global supply chains can adjust to the loss of supply from Japan; and how quickly Japan can regain its economic activity and rebuild its capital stock.

Since Japan has a history of severe earthquakes, its citizens and companies have made considerable preparations and have recovered from previous disasters. The January 1995 Kobe earthquake (6.8 magnitude) hit a region that was heavily industrialized and densely populated and caused about $100 billion in damage. The immediate effect was a contraction in Japan's economy of 2.6% but a recovery that began the following month.[5] The Kobe quake, however, did not trigger a tsunami, a nuclear crisis, or severe shortages of electricity.

Economic Impact

The direct damage from Japan's earthquake and tsunami has been concentrated in the northern region of the country, some distance from Japan's industrial heartland. The financial and economic effects, however, are spreading through the Japanese economy and the East Asian region and also may affect businesses and consumers in the United States. The effect of the record 9.0 earthquake was compounded by the ensuing tsunami that swept as far as 6 miles inland in Japan, causing widespread destruction, and spread out across the Pacific. It caused tens of millions of dollars of damage in Hawaii, as much as $40 million in damage in California, and millions of dollars of damage primarily to harbors and boats in Oregon. The damage, furthermore, has been compounded by the potential nuclear contamination from the Fukushima Daiichi Nuclear Plant plus a shortage of gasoline and of electricity that has caused rolling blackouts in Japan's industrial centers.

Japan's economic growth, already anemic because of the global recession in 2008-2009, is expected to drop into negative territory for a quarter or two but turn positive again as the crisis passes and rebuilding commences. As the extent of the damage becomes more apparent, forecasts for Japan's economic growth are becoming more and more pessimistic. Initial expectations were that the disaster would shave 0.2 to 0.5 percentage points off total GDP growth in 2011 but that growth still would be around 1%. By March 23, an estimate by IHS Global Insight was for growth in 2011 to be 0.5% with reconstruction in 2012 increasing it to about 3.5%.[6] Morgan Stanley, however, expects a short and deep recession in Japan with the economy shrinking by 1% to 3% in 2011 and a reduction in global growth of about 0.5 percentage points.[7]

[5] Kyohei Morita and Yuichiro Nagai, *Japan Economic Focus, Economic implications of earthquake*, Barclays Capital, Japan Economic Research, March 15, 2011.

[6] IHS Global Insight, *Japan: Japan's Earthquake: a Macroeconomic Damage Assessment*, Country Intelligence - Analysis, March 24, 2011.

[7] Morgan Stanley MUFG, *Tohoku Earthquake: First Assessment*, Japan Research, New York, NY, March 22, 2011, p. 6.

Manufacturing

Typically, the negative effects of a natural disaster are large immediately after the event and are mostly concentrated in the region of the disaster. In the case of Japan's disaster, however, the negative impact is greater because the estimated $309 billion (5.7% of GDP and less than 2% of capital stock)[8] or more in damage from the combination of the earthquake and tsunami is being compounded by the evacuations and uncertainty from the problems at the Fukushima nuclear reactors, the shortfall in electricity, and a scarcity of gasoline that is hampering rescue and recovery efforts. In addition to the nuclear plants destroyed, other generating plants are expected to remain offline until repairs are made and safety ensured. This has caused rolling blackouts lasting as long as three to four hours at a time that have disrupted Japan's production capacity in its industrial heartland farther south in the Tokyo-Osaka corridor. While the visual images mainly have been of the tsunami and its aftermath, the earthquake also damaged plants and equipment far from its epicenter. Port facilities,[9] sensitive electronic equipment, 2,035 roads, and 53 bridges also were harmed. These were located in a wide area of the country that even reached Tokyo's northern suburbs.[10] The human toll also has been great. An estimated 245,000 people are in evacuation shelters; 243,000 homes are without power; and 720,000 homes are without potable water.[11]

The three prefectures in eastern Tohoku that took the brunt of the earthquake and tsunami account for about 6% to 7% of Japan's GDP. The city of Sendai, with a population of roughly 1 million, is in the middle of an agricultural region, but it still has a considerable number of industrial facilities. The villages most damaged by the tsunami were engaged primarily in fishing, but manufacturing accounts for about a quarter of production in the region,[12] and plants in the most severely damaged areas supply parts and products used in manufacturing elsewhere in Japan. As of March 16, 2011, all 12 automakers in Japan reportedly had temporarily stopped production at some plants. Companies such as Hitachi (equipment for power plants), Renesas Electronics (semiconductors), NEC (electronics), Sony (electronics), and Fujitsu (computers) also had suspended operations at certain plants in the affected area.[13] Japan also supplies parts for manufacturing in China, South Korea, and other Asian countries. As of March 25, Japanese oil refiners had restored capacity in three of the six refineries that had halted production. The plants restarted accounted for 17% of Japan's domestic refining capacity and left 14% of capacity still halted. However, since other refineries had been operating at below capacity, some production is expected to be covered by other plants.[14]

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[8] World Bank, *East Asia and Pacific Economic Update 2011*, The Recent Earthquake and Tsunami in Japan: Implications for East Asia, Washington, DC, March 21, 2011, http://siteresources.worldbank.org/INTEAPHALFYEARLYUPDATE/Resources/550192-1300567391916/EAP_Update_March2011_japan.pdf.

[9] Kesennuma and Ishonomaki ports are not operating.

[10] Roads in Tokyo (16 roads) and in neighboring prefectures of Saitama (155) and Chiba (278) also were damaged.

-[11] U.S. Department of State, *Japan Earthquake Update 17*, March 21, 2011.

[12] Kyohei Morita and Yuichiro Nagai, *Economic Implications of Earthquake*, op. cit.

[13] "Production Bases Destroyed by Quake. Manufacturers' Plants, Distribution Facilities in Tohoku, Northern Kanto Hit Hard," *Yomiuri Shimbun*, March 16, 2011.

[14] "Quake-Hit Refiners Restoring Fuel Supply," *Nikkei.com*, March 25, 2011.

Some Business Disruptions

- A Hitachi factory north of Tokyo that makes 60% of the world's supply of airflow sensors was shut down. This caused General Motors to shut a plant in Shreveport, LA, for a week and Peugeot-Citroen to cut back production at most of its European plants.
- Two Japanese plants accounting for 25% of the world's supply of silicon wafers for computer chips were closed.
- A Toshiba plant making liquid crystal displays was damaged.
- Texas Instruments had to close a factory in Japan (until September 2011) accounting for about 10% of its revenues.
- Hitachi Vehicle Energy, Ltd. announced it intended to resume production on March 28 of lithium ion car batteries at its Ibaraki prefecture facility.
- Nippon Chemi-Con Corp., the largest producer of aluminum electrolytic capacitors used in everything from computers to industrial equipment, has four Japanese factories that are down, so it intends to boost production at 10 overseas bases, including factories in Indonesia, Malaysia, and China.
- Nihon Dempa Kogyo, the second-largest maker of quartz components (with a roughly 20% share of the global market), is turning to operations in Malaysia and elsewhere to compensate for damage at its plant in northern Japan, which assembles quartz components for automotive applications.
- Nissan is considering importing engines from its plant in Tennessee because its engine factory in Fukushima prefecture has been damaged.
- Japan's major automakers are expected to produce about 400,000 fewer vehicles domestically as a result of the earthquake and tsunami.
- Delta Airlines, the largest foreign carrier in Japan, is cutting capacity to and through its Tokyo hub by 15% to 20% through May and expects the crisis in Japan to reduce profits in 2011 by $250 million to $400 million.

Financial and Currency Markets

For the U.S. economy, the disaster in Japan came on top of the turmoil in the Middle East, rising oil and food prices, and a weak recovery with unemployment hovering at 9%. It has added new uncertainty to markets already under stress. The first effects have been financial as values on stock markets dropped and paper values shrunk. Equity markets, however, are expected to recover over time as the impact of a disaster is factored into risk calculations and the economic effects become clear. Still the situation in Japan has added to instability in financial markets in the United States and the world.

Figure 3. A Damaged Water Pipe Shoots into the Air, Hachinohe, Japan

Source: U.S. Navy photo by Chief Mass Communication Specialist Daniel Sanford.

The value of the yen and interest rates also are being affected. Investors, hedge funds, and speculators have bought yen in anticipation that Japan's wealth holders, insurance companies, and possibly the government will have to repatriate overseas investments in order to finance insurance payouts and rebuilding. The value of the yen (83.8 yen per dollar on February 15, 2011, and 122 yen per dollar less than four years ago) touched a record 76.25 yen per dollar on March 17 before retreating to the 80 yen level. On March 18, the Group of Seven (G-7) nations agreed to "cooperate as appropriate" to address excessive and volatile movements in the foreign exchange market (in other words, to intervene in weakening the value of the yen). This decision was made by monetary authorities in Japan, the United States, the eurozone, Canada, and Britain.[15] Japan's Ministry of Finance argued that Japan's life and casualty insurers already have secured considerable funding and intend to tap domestic markets rather than repatriating funds from overseas and that the strength of the yen was due to speculation.[16] Any yen appreciation that does occur would make Japanese exports less competitive in U.S. markets and U.S. exports more competitive in Japanese markets. In addition, since China's yuan has been linked closely to the value of the dollar, Chinese exporters are likely to gain further price competitiveness relative to those from Japan.

Approximately a quarter of developing East Asia's long-term debt is denominated in yen. For China, 8% of its external government debt is in yen. The figure for Thailand is about 60%, for

[15] Dan Milmo, "G7 rallies behind Japan in bid to curb soaring yen," *The Guardian*, March 18, 2011, http://www.guardian.co.uk/business/2011/mar/18/g7-japan-curb-soaring-yen-intervention.

[16] From an internal report by Medley Global Advisors, March 16, 2011.

Vietnam about 35%, for the Philippines about 32%, and for Indonesia about 30%. A 1% appreciation in the value of the yen translates into a $250 million increase in annual debt servicing on yen-denominated securities by East Asia's developing countries.[17]

Another question deals with the impact on U.S. interest rates and how they might be affected by changes in capital flows to and from Japan. Japanese investors are major private foreign holders of U.S. Treasury securities that finance the U.S. national debt, and their importance has soared over the last few years. At the end of 2010, Japanese residents held $882.3 billion in U.S. securities. At one time, Japanese investors were the largest foreign holders of U.S. Treasury securities, but beginning in September 2008, residents in China surpassed them and, as of the end of 2010, held $1,160.1 billion in U.S. Treasury securities.[18] Japanese holdings of U.S. Treasury securities underscore the debtor/creditor link between the United States and Japan. As the U.S. government continues to incur budget deficits and maintains a low national savings rate, the United States has had to rely increasingly on foreign creditors to finance the rising national debt. Some analysts have suggested that Japanese private and government investors in U.S. Treasury securities may have to slow down or diminish their holdings to finance reconstruction operations in Japan. Such a move could increase the interest rates that the U.S. government must pay to finance its debt. Other analysts have suggested such an impact would be limited, as Japan should have sufficient domestic capital to cover the extra expenses. As the disaster developed, the flight to the safety of U.S. Treasury securities by investors all over the world more than offset any repatriation of funds back to Japan.

The Bank of Japan has been injecting funds into the banking system to ensure that there would be no shortage of cash or funds to lend and no spikes in Japan's interest rates. As of March 17, the bank had made liquidity injections of $418 billion (33 trillion yen) into financial markets. This far exceeded the 4.5 trillion yen injected after the collapse of Lehman Brothers in 2008.[19]

In Japan, a concern is that the public debt at about 200% of GDP has become so high that borrowing to finance reconstruction could trigger a loss of confidence in the ability of the Japanese government to repay its debts. In such a case, Japan could face a sovereign debt crisis similar to that faced by Greece. Prior to the earthquake, in January 2011, Standard & Poor's, the credit ratings agency, had already downgraded Japan's long-term sovereign debt to AA- from AA. This is three levels below the highest possible rating. This was S&P's first downgrade of Japanese government debt since 2002.[20] When Greece faced a sovereign crisis in 2010, its national debt was 123% of GDP. In Japan's case, however, 95% of its national debt is owned by Japanese citizens, not foreign hedge and other funds. According to one analyst, it is unlikely that those citizens would dump their bond holdings if the government takes on more debt to rebuild the area struck by the earthquake and tsunami. Financially, Japan's government appears to have more maneuvering room than might seem apparent by the debt ratios.[21]

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[17] World Bank, The Recent Earthquake and Tsunami in Japan: Implications for East Asia, March 21, 2011, op. cit.

[18] U.S. Department of the Treasury, http://www.ustreas.gov/tic/.

[19] Ibid.

[20] Hiroko Tabuchi and Bettina Wassener, "S.&P. Downgrades Japan as Debt Concerns Spread," *The New York Times*, January 27, 2011, Internet edition. Moody's gives Japanese government debt a similar rating.

[21] Marcus Noland, *Will the Crisis Create a New Japan?*, Peterson Institute for International Economics, op-ed, *Washington Post*, March 16, 2011.

Most insurance payments are expected to be borne primarily by Japanese insurance companies and their government. Insurance companies everywhere, however, pass some of their risk exposure onto global reinsurance providers. One early estimate of the insured damage from the earthquake alone was $15 billion to $35 billion.[22] Even property insurance claims of $50 billion, however, would be equivalent only to about 10% of Japan's insurance premium income and less than 1% of insurance company assets.[23] Added to the earthquake damage will be claims arising from the tsunami, insured production losses, and possibly increased health costs from nuclear contamination. Japanese insurers jointly own a reinsurer, the Japan Earthquake Reinsurance Company, which in turn is backstopped by the Japanese government. Ultimately, the government stands as the insurer of last resort in the case of earthquakes. As for individual homeowners, most tend not to carry earthquake or flood insurance. Household rebuilding, therefore, is likely to come out of household savings, some of which has been invested overseas.

Figure 4. Aerial View of Minato, Japan, a Week After the Tsunami

Source: U.S. Marine Corps photo by Lance Cpl. Ethan Johnson.

[22] AIR Worldwide, *AIR Worldwide Releases Preliminary Estimate of Insured Losses for the M9.1 Tohoku Earthquake,* Press Release, Boston, MA, March 13, 2011.

[23] International Monetary Fund, Global Markets Analysis Division, Monetary and Capital Markets Division, *Global Markets Monitor*, Washington, DC, March 17, 2011.

Implications for the U.S.-Japan Economic Relationship

The U.S.-Japan economic relationship is very strong and mutually advantageous. The two economies are integrated via trade in goods and services—they are important markets for each other's exports and important sources of imports. Japan and the United States are also connected via capital flows. Japan is a major foreign source of financing of the U.S. national debt and will likely remain so for the foreseeable future, as the mounting U.S. debt needs to be financed and the stock of U.S. domestic savings remains insufficient to meet the demand. Japan is also a significant source of foreign private portfolio and direct investment in the United States, and the United States is the origin of much of the foreign investment in Japan.

Japan and the United States remain important trading partners to one another; however, their relative importance has declined over the years as other trading partners have increased their importance. In 1996, Japan accounted for 10.8% of U.S. exports and 14.8% of imports, but for only 4.7% of U.S. exports and 6.3% of U.S imports by 2010. In 1996, the United States accounted for 27.2% of Japanese exports and 22.7% of Japanese imports, but for only 15.4% of Japanese exports and 9.7% of Japanese imports by 2010. The diminished importance has been the result in part of the development of international production networks and the segmentation of production processes across countries giving rise to China as a important trading partner for both the United States and Japan.

An important factor in determining the volume of trade flows is the relative growth rates in each of the trading partners. For example, in 2009, both U.S. exports to Japan and imports from Japan declined substantially, reflecting the effects of the global economic downturn. The crisis was particularly hard on a Japan that was trying to recover from more than a decade and a half of economic stagnation. In 2010, U.S.-Japan trade showed signs of recovery as both the U.S. and Japanese economies grew, 2.9% and 4.0%, respectively.[24] If, as expected, the Japanese economy experiences slower economic growth as a result of the earthquake-related crisis, U.S. exports could decline, depending on the extent of the impact. A major portion of U.S. exports to Japan consists of optical and medical equipment; computers and components; semiconductors; and agricultural products, such as meat and wheat. Many economists expect Japanese economic growth to rise as the country begins to recover from the damage.[25]

Some sectors of U.S.-Japan trade are likely to be affected. For example, close to 35% of U.S. imports from Japan in 2010 consisted of passenger cars and auto parts. Some Japanese auto manufacturers, such as Toyota Motor Corp., have assembly operations in the immediate vicinity of the earthquake. Other manufacturers who may not be directly located in the earthquake area have been affected by power outages and other effects of the disaster and have had to curtail operations, reducing output. Japanese auto manufacturers have also been adversely affected by disruption of operations of parts suppliers.[26]

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[24] Economist Intelligence Unit.

[25] According to one estimate, Japan's GDP growth could be reduced by 0.3% resulting in no growth for the current quarter. Global Insight. *Japan's March 2011 Earthquake: Disruption, Risks and Outlook,* March 16, 2011. Another estimate puts the loss at 0.5% GDP. Standard Charted Research, *Japan—Assessing the Impact* ,March 15, 2011.

[26] *Automotive News,* March 14, 2011.

In addition, U.S.-based auto manufacturers may also be affected by the problems in Japan. Some Japanese-owned companies in the United States have had to curtail operations because they cannot obtain parts from Japan. For example, some models assembled in the United States by Toyota, Mitsubishi, Nissan, and Mazda import engines and/or transmissions from Japan.[27] Also, some U.S.-name plate manufacturers have been affected. For example, Ford Motor Co. depends on imports of Japanese-made memory chips and batteries. In addition, a significant portion of U.S. imports from Japan are in machinery (20.6%), including printers and computers, and electrical machinery (15.2%), including semiconductors, shipments of which could be interrupted because of the crisis. The full extent of the effects of the problems in Japan is yet to be determined.[28]

In 2010, Japanese suppliers accounted for more than one-fifth of global semiconductor production, and companies headquartered in Japan generated $63.3 billion in microchip revenue. This represented 20.8% of the worldwide market. Not all of the actual production, however, is located in Japan.[29]

Tourism also is likely to be affected. Hawaii already has experienced cancellations of tours from Japan. Japanese tourists accounted for $1.9 billion in revenue in Hawaii, 18% of tourist arrivals there, and numbered second only to arrivals from other parts of the United States.[30] For the United States as a whole, about 3.5 million tourists from Japan arrived in 2010, placing Japan in fourth place after Canada, Mexico, and the United Kingdom.[31]

The Obama Administration has engaged in discussions with Japan regarding the possibility of Japan joining negotiations to establish the Trans-Pacific Partnership (TPP) Initiative. Before the March 11 earthquake, the government of Prime Minister Kan indicated it would make a decision on TPP by this June. However, some members of the Japanese Diet have indicated that that decision may have to be delayed as a result of the disaster.[32]

Legislative Activity

H.Res. 172 (Honda). Expressing heartfelt condolences and support for assistance to the people of Japan and all those affected in the aftermath of the deadly earthquake and tsunamis of March 11, 2011.

S.Res. 101 (Reid) A resolution expressing the sense of the Senate relating to the March 11, 2011, earthquake and tsunami in Japan.

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[27] National Highway Administration, http://www.nhtsa.gov.

[28] *Automotive News*, March 15, 2011.

[29] E-mail communication from Dale Ford, Senior Vice President, Market Intelligence, IHS iSuppli company. March 17, 2011.

[30] "Japan crisis 'terrible' for Hawaii tourism," *UPI.com*, March 17, 2011.

[31] U.S. Department of Commerce, International Trade Administration, *Table C - Section 5: United Kingdom, Japan, S. Korea, PRC (EXCL Hong Kong), ROC(Taiwan) Non-Resident Visitation to the U.S. By world region/country of residence 2010* , 2010 Monthly Tourism Statistics, Washington, DC, Data through November 2010, http://tinet.ita.doc.gov/view/m-2010-I-001/table5.html.

[32] *Washington Trade Daily*, March 25, 2011.

Appendix.

Table A-1. Japanese Top Merchandise Exports by Market Country

Millions of U.S. Current Dollars

					% Share		
Rank	**Country**	**2008**	**2009**	**2010**	**2008**	**2009**	**2010**
0	—World—	781,952.3	580,465.4	770,112.2	100.0	100.0	100.0
1	China	124,952.2	109,576.6	149,692.3	16.0	18.9	19.4
2	United States	137,306.0	93,624.2	118,798.2	17.6	16.1	15.4
3	Korea, South	59,418.2	47,217.0	62,299.1	7.6	8.1	8.1
4	Taiwan	46,033.6	36,409.8	52,474.2	5.9	6.3	6.8
5	Hong Kong	40,280.6	31,858.7	42,315.2	5.2	5.5	5.5
6	Thailand	29,491.5	22,247.9	34,235.6	3.8	3.8	4.5
7	Singapore	26,627.5	20,694.3	25,236.7	3.4	3.6	3.3
8	Germany	23,984.3	16,646.2	20,445.2	3.1	2.9	2.7
9	Malaysia	16,436.8	12,859.1	17,643.1	2.1	2.2	2.3
10	Netherlands	21,077.0	13,512.5	16,399.5	2.7	2.3	2.1

Source: Japan Customs via Global Trade Atlas.

Note: Countries ranked by trade value in 2010.

Table A-2. Japanese Top Merchandise Imports From Source Countries

Millions of Current U.S. Dollars

					% Share		
Rank	**Country**	**2008**	**2009**	**2010**	**2008**	**2009**	**2010**
0	—World—	762,487.7	551,787.9	692,844.6	100.0	100.0	100.0
1	China	143,657.2	122,514.5	153,370.1	18.8	22.2	22.1
2	United States	77,666.9	58,959.1	67,400.1	10.2	10.7	9.7
3	Australia	47,677.2	34,729.6	44,805.6	6.3	6.3	6.5
4	Saudi Arabia	50,840.8	29,192.0	35,890.3	6.7	5.3	5.2
5	United Arab Emirates	46,759.0	22,713.8	29,280.6	6.1	4.1	4.2
6	Korea, South	29,500.7	21,977.6	28,641.8	3.9	4.0	4.1
7	Indonesia	32,555.1	21,810.6	28,113.8	4.3	4.0	4.1
8	Taiwan	21,824.6	18,336.6	23,073.8	2.9	3.3	3.3
9	Malaysia	23,241.2	16,726.6	22,708.1	3.1	3.0	3.3
10	Qatar	26,422.4	15,924.2	21,697.0	3.5	2.9	3.1

Source: Japan Customs via Global Trade Atlas.

Note: Countries ranked by import value in 2010.

Table A-3. Japanese Top Surplus Balance Countries

Millions of Current U.S. Dollars

Rank	Country	2008	2009	2010
0	—World—	19,464.6	28,677.5	77,267.5
1	United States	59,639.1	34,665.0	51,398.1
2	Hong Kong	38,718.8	30,760.4	40,794.9
3	Korea, South	29,917.6	25,239.4	33,657.4
4	Taiwan	24,209.0	18,073.2	29,400.4
5	Singapore	18,734.8	14,589.1	17,081.3
6	Panama	10,952.7	12,641.4	15,004.8
7	Thailand	8,678.5	6,225.0	13,210.8
8	Netherlands	17,255.2	10,055.1	12,445.4
9	United Kingdom	8,974.6	6,123.4	7,874.2
10	Mexico	6,137.0	4,037.7	5,979.6

Source: Japan Customs via Global Trade Atlas.

Note: Countries ranked by 2010 balance data.

Table A-4. Japanese Top Deficit Balance Countries

Millions of U.S. Current Dollars

Rank	Country	2008	2009	2010
1	Saudi Arabia	-42,941.6	-23,801.2	-29,407.0
2	Australia	-30,389.3	-22,548.7	-28,960.7
3	United Arab Emirates	-35,872.2	-16,222.6	-21,946.9
4	Qatar	-24,391.2	-14,295.9	-20,555.9
5	Indonesia	-19,947.6	-12,481.7	-12,192.0
6	Iran	-16,336.0	-7,655.0	-9,080.2
7	Kuwait	-13,117.7	-7,744.6	-8,870.8
8	Russia	3,112.3	-5,560.9	-8,100.3
9	Malaysia	-6,804.4	-3,867.5	-5,065.0
10	Chile	-5,166.4	-3,954.9	-4,849.5

Source: Japan Customs via Global Trade Atlas.

Note: Countries ranked by 2010 balance values.

Table A-5. World Top Five Exporting and Importing Countries

Merchandise Trade, All Commodities, Calendar Years 2008-2010

Top Five Reporting Countries Exports with World, Ranked by 2010 Exports

	Millions of Current United States Dollars			% Change	% of Total
Country	**2008**	**2009**	**2010**	**2010/2009**	**2010**
World Total	15,426,934	11,794,981	12,592,915	6.8	100.0
China	1,428,319	1,201,663	1,577,941	31.3	12.5
USA	1,287,442	1,056,043	1,277,504	21.0	10.1
Germany	1,448,973	1,120,639	1,268,890	13.2	10.1
Japan	781,952	580,465	770,112	32.7	6.1
Netherlands	638,503	498,503	573,352	15.0	4.6

Top Five Reporting Countries Imports from World, Ranked by 2010 Imports

	Millions of Current United States Dollars			% Change	% of Total
Country	**2008**	**2009**	**2010**	**2010/2009**	**2010**
World Total	15,950,342	12,041,608	12,854,666	6.8	100.0
USA	2,103,641	1,559,625	1,912,092	22.6	14.9
China	1,133,388	1,005,555	1,394,813	38.7	10.9
Germany	1,185,536	925,833	1,066,723	15.2	8.3
Japan	762,488	551,788	692,845	25.6	5.4
France	716,502	559,895	606,168	8.3	4.7

Source: CRS with National Trade Reporting Agencies via Global Trade Atlas.

Notes: Statistics based on countries reporting as of 3/22/2011.

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